

# SEQUENCE LISTING

<110> Beer, Steven V.  
Bauer, David W.

<120> OOMYCETE-RESISTANT TRANSGENIC PLANTS BY VIRTUE OF  
PATHOGEN-INDUCED EXPRESSION OF A HETEROLOGOUS  
HYPERSENSITIVE RESPONSE ELICITOR

<130> 19603/2501

<140>

<141>

<150> 60/178,565

<151> 2000-01-26

<160> 26

<170> PatentIn Ver. 2.1

<210> 1

<211> 338

<212> PRT

<213> *Erwinia chrysanthemi*

<400> 1

Met	Gln	Ile	Thr	Ile	Lys	Ala	His	Ile	Gly	Gly	Asp	Leu	Gly	Val	Ser
1				5					10					15	

Gly	Leu	Gly	Ala	Gln	Gly	Leu	Lys	Gly	Leu	Asn	Ser	Ala	Ala	Ser	Ser
			20					25					30		

Leu	Gly	Ser	Ser	Val	Asp	Lys	Leu	Ser	Ser	Thr	Ile	Asp	Lys	Leu	Thr
		35					40					45			

Ser	Ala	Leu	Thr	Ser	Met	Met	Phe	Gly	Gly	Ala	Leu	Ala	Gln	Gly	Leu
	50					55					60				

Gly	Ala	Ser	Ser	Lys	Gly	Leu	Gly	Met	Ser	Asn	Gln	Leu	Gly	Gln	Ser
65					70					75				80	

Phe	Gly	Asn	Gly	Ala	Gln	Gly	Ala	Ser	Asn	Leu	Leu	Ser	Val	Pro	Lys
			85						90					95	

Ser	Gly	Gly	Asp	Ala	Leu	Ser	Lys	Met	Phe	Asp	Lys	Ala	Leu	Asp	Asp
			100					105					110		

Leu Leu Gly His Asp Thr Val Thr Lys Leu Thr Asn Gln Ser Asn Gln  
 115 120 125  
 Leu Ala Asn Ser Met Leu Asn Ala Ser Gln Met Thr Gln Gly Asn Met  
 130 135 140  
 Asn Ala Phe Gly Ser Gly Val Asn Asn Ala Leu Ser Ser Ile Leu Gly  
 145 150 155 160  
 Asn Gly Leu Gly Gln Ser Met Ser Gly Phe Ser Gln Pro Ser Leu Gly  
 165 170 175  
 Ala Gly Gly Leu Gln Gly Leu Ser Gly Ala Gly Ala Phe Asn Gln Leu  
 180 185 190  
 Gly Asn Ala Ile Gly Met Gly Val Gly Gln Asn Ala Ala Leu Ser Ala  
 195 200 205  
 Leu Ser Asn Val Ser Thr His Val Asp Gly Asn Asn Arg His Phe Val  
 210 215 220  
 Asp Lys Glu Asp Arg Gly Met Ala Lys Glu Ile Gly Gln Phe Met Asp  
 225 230 235 240  
 Gln Tyr Pro Glu Ile Phe Gly Lys Pro Glu Tyr Gln Lys Asp Gly Trp  
 245 250 255  
 Ser Ser Pro Lys Thr Asp Asp Lys Ser Trp Ala Lys Ala Leu Ser Lys  
 260 265 270  
 Pro Asp Asp Asp Gly Met Thr Gly Ala Ser Met Asp Lys Phe Arg Gln  
 275 280 285  
 Ala Met Gly Met Ile Lys Ser Ala Val Ala Gly Asp Thr Gly Asn Thr  
 290 295 300  
 Asn Leu Asn Leu Arg Gly Ala Gly Gly Ala Ser Leu Gly Ile Asp Ala  
 305 310 315 320  
 Ala Val Val Gly Asp Lys Ile Ala Asn Met Ser Leu Gly Lys Leu Ala  
 325 330 335  
 Asn Ala

<210> 2  
 <211> 2141

<212> DNA

<213> *Erwinia chrysanthemi*

<400> 2

```
cgatttttacc cgggtgaacg tgctatgacc gacagcatca cggatttcga caccgttacg 60
gcgttttatgg ccgcgatgaa ccggcatcag gcggcgcgct ggtcgccgca atccggcgctc 120
gatctgggtat ttcagtttgg ggacaccggg cgtgaactca tgatgcagat tcagccgggg 180
cagcaatatc ccggcatggt ggcgacgctg ctgctcgtc gttatcagca ggccggcagag 240
tgcgatgggt gccatctgtg cctgaacggc agcgatgtat tgatcctctg gtggccgctg 300
ccgtcggatc ccggcagtta tccgcagggt atcgaacgtt tgtttgaact ggccgggaatg 360
acgttgccgt cgctatccat agcaccgacg gcgcgtccgc agacaggga cggacgcgcc 420
cgatcattaa gataaaggcg gcttttttta ttgcaaacg gtaacggtga ggaaccgttt 480
caccgtcggc gtcactcagt aacaagtatc catcatgatg cctacatcgg gatcggcgctg 540
ggcatccgtt gcagatactt ttgcgaacac ctgacatgaa tgaggaaacg aaattatgca 600
aattacgatc aaagcgcaca tggcggtga tttggcgctc tccggtctgg ggctgggtgc 660
tcagggactg aaaggactga attccgcggc ttcacgctg ggttcacgagc tggataaact 720
gagcagcacc atcgataagt tgacctcgc gctgacttcg atgatgtttg gcggcgcgct 780
ggcgcgaggg ctggcgcgcca gctcgaaggg gctggggatg agcaatcaac tgggccagtc 840
tttcggcaat ggcgcgcgagg gtgcgagcaa cctgctatcc gtaccgaaat ccggcgcgca 900
tgcgttgtca aaaatgtttg ataaagcgct ggacgatctg ctgggtcatg acaccgtgac 960
caagctgact aaccagagca accaactggc taattcaatg ctgaacgcca gccagatgac 1020
ccagggtaat atgaatgcgt tcggcagcgg tgtgaacaac gcactgtcgt ccattctcgg 1080
caacggtctc ggccagtcga tgagtggctt ctctcagcct tctctggggg caggcggtt 1140
gcagggcctg agcggcgcgg gtgcattcaa ccagttgggt aatgccatcg gcatggcgct 1200
ggggcagaat gctgcgctga gtgcgttgag taacgtcagc acccacgtag acggttaaaa 1260
ccgccacttt gtagataaag aagatcgcgg catggcgaaa gagatcggcc agtttatgga 1320
tcagtatccg gaaatattcg gtaaaccgga ataccagaaa gatggctgga gttcgccgaa 1380
gacggacgac aaatcctggg ctaaagcgct gagtaaaccg gatgatgacg gtatgaccgg 1440
cgccagcatg gacaaattcc gtcaggcgat gggatgatc aaaagcgcgg tggcggtga 1500
taccggcaat accaacctga acctgcgtgg cgcggcggtg gcatcgctgg gtatcgatgc 1560
ggctgtcgtc ggcgataaaa tagccaacat gtcgctgggt aagctggcca acgcctgata 1620
atctgtgctg gcctgataaa gcggaaacga aaaaagagac ggggaagcct gtctcttttc 1680
ttattatgcy gtttatgcgg ttacctggac cggttaatca tcgtcatcga tctggtacaa 1740
acgcacattt tcccgttcac tcgcgctggt acgcgccaca atcgcgatgg catcttcttc 1800
gtcgtcaga ttgcgcggct gatggggaac gccgggtgga atatagagaa actcgccggc 1860
cagatggaga cacgtctcgc ataaatctgt gccgtaacgt gtttctatcc gcccttttag 1920
cagatagatt gcggtttcgt aatcaacatg gtaatgcggt tccgcctgtg cgcggccgg 1980
gatcaccaca atattcatag aaagctgtct tgcacctacc gtatcgcggg agataccgac 2040
aaaatagggc agtttttgcg tggtatccgt ggggtgttcc ggccctgaaa tcttgagttg 2100
gttcgtcatc atctttctcc atctgggcga cctgatcggt t 2141
```

<210> 3

<211> 403

<212> PRT

<213> *Erwinia amylovora*

<400> 3

Met Ser Leu Asn Thr Ser Gly Leu Gly Ala Ser Thr Met Gln Ile Ser  
 1 5 10 15  
 Ile Gly Gly Ala Gly Gly Asn Asn Gly Leu Leu Gly Thr Ser Arg Gln  
 20 25 30  
 Asn Ala Gly Leu Gly Gly Asn Ser Ala Leu Gly Leu Gly Gly Gly Asn  
 35 40 45  
 Gln Asn Asp Thr Val Asn Gln Leu Ala Gly Leu Leu Thr Gly Met Met  
 50 55 60  
 Met Met Met Ser Met Met Gly Gly Gly Gly Leu Met Gly Gly Gly Leu  
 65 70 75 80  
 Gly Gly Gly Leu Gly Asn Gly Leu Gly Gly Ser Gly Gly Leu Gly Glu  
 85 90 95  
 Gly Leu Ser Asn Ala Leu Asn Asp Met Leu Gly Gly Ser Leu Asn Thr  
 100 105 110  
 Leu Gly Ser Lys Gly Gly Asn Asn Thr Thr Ser Thr Thr Asn Ser Pro  
 115 120 125  
 Leu Asp Gln Ala Leu Gly Ile Asn Ser Thr Ser Gln Asn Asp Asp Ser  
 130 135 140  
 Thr Ser Gly Thr Asp Ser Thr Ser Asp Ser Ser Asp Pro Met Gln Gln  
 145 150 155 160  
 Leu Leu Lys Met Phe Ser Glu Ile Met Gln Ser Leu Phe Gly Asp Gly  
 165 170 175  
 Gln Asp Gly Thr Gln Gly Ser Ser Ser Gly Gly Lys Gln Pro Thr Glu  
 180 185 190  
 Gly Glu Gln Asn Ala Tyr Lys Lys Gly Val Thr Asp Ala Leu Ser Gly  
 195 200 205  
 Leu Met Gly Asn Gly Leu Ser Gln Leu Leu Gly Asn Gly Gly Leu Gly  
 210 215 220  
 Gly Gly Gln Gly Gly Asn Ala Gly Thr Gly Leu Asp Gly Ser Ser Leu  
 225 230 235 240  
 Gly Gly Lys Gly Leu Gln Asn Leu Ser Gly Pro Val Asp Tyr Gln Gln  
 245 250 255

Leu Gly Asn Ala Val Gly Thr Gly Ile Gly Met Lys Ala Gly Ile Gln  
260 265 270

Ala Leu Asn Asp Ile Gly Thr His Arg His Ser Ser Thr Arg Ser Phe  
275 280 285

Val Asn Lys Gly Asp Arg Ala Met Ala Lys Glu Ile Gly Gln Phe Met  
290 295 300

Asp Gln Tyr Pro Glu Val Phe Gly Lys Pro Gln Tyr Gln Lys Gly Pro  
305 310 315 320

Gly Gln Glu Val Lys Thr Asp Asp Lys Ser Trp Ala Lys Ala Leu Ser  
325 330 335

Lys Pro Asp Asp Asp Gly Met Thr Pro Ala Ser Met Glu Gln Phe Asn  
340 345 350

Lys Ala Lys Gly Met Ile Lys Arg Pro Met Ala Gly Asp Thr Gly Asn  
355 360 365

Gly Asn Leu Gln Ala Arg Gly Ala Gly Gly Ser Ser Leu Gly Ile Asp  
370 375 380

Ala Met Met Ala Gly Asp Ala Ile Asn Asn Met Ala Leu Gly Lys Leu  
385 390 395 400

Gly Ala Ala

<210> 4

<211> 1288

<212> DNA

<213> *Erwinia amylovora*

<400> 4

aagcttcggc atggcacgtt tgaccgttgg gtcggcaggg tacgtttgaa ttattcataa 60  
gaggaatacg ttatgagtct gaatacaagt gggctgggag cgtcaacgat gcaaatttct 120  
atcggcgggtg cgggcggaaa taacgggttg ctgggtacca gtcgccagaa tgctggggtg 180  
ggtggcaatt ctgcactggg gctgggcggc ggtaatcaaa atgataccgt caatcagctg 240  
gctggcttac tcaccggcat gatgatgatg atgagcatga tgggcggtgg tgggctgatg 300  
ggcgggtggc taggcgggtg cttaggtaat ggcttgggtg gctcaggtgg cctgggcgaa 360  
ggactgtcga acgcgctgaa cgatatgtta ggcggttcgc tgaacacgct gggctcgaaa 420  
ggcggcaaca ataccacttc aacaacaaat tccccgctgg accaggcgct ggggtattaac 480  
tcaacgtccc aaaacgacga ttccacctcc ggcacagatt ccacctcaga ctccagcgac 540  
ccgatgcagc agctgctgaa gatgttcagc gagataatgc aaagcctgtt tgggtgatggg 600  
caagatggca cccagggcag ttcctctggg ggcaagcagc cgaccgaagg cgagcagaac 660

gcctataaaa aaggagtcac tgatgcgctg tcgggcctga tgggtaatgg tctgagccag 720  
ctccttgcca acgggggact gggaggtggt cagggcggtg atgctggcac gggctcttgac 780  
ggttcgtcgc tgggcggaac agggctgcaa aacctgagcg ggccggtgga ctaccagcag 840  
ttaggtaacg ccgtgggtac cgggtatcgg atgaaagcgg gcattcaggc gctgaatgat 900  
atcggtagcg acaggcacag ttcaaccggt tctttcgtca ataaaggcga tcgggcgatg 960  
gcgaaggaaa tcggtcagtt catggaccag tatcctgagg tgtttggaac gccgcagtac 1020  
cagaaaggcc cgggtcagga ggtgaaaacc gatgacaaat catgggcaaa agcactgagc 1080  
aagccagatg acgacggaat gacaccagcc agtatggagc agttcaacaa agccaagggc 1140  
atgatcaaaa ggcccatggc ggggtgatacc ggcaacggca acctgcaggc acgcggtgcc 1200  
ggtaggttctt cgctgggtat tgatgccatg atggccggtg atgccattaa caatatggca 1260  
cttggaagc tgggcgcggc ttaagctt 1288

<210> 5

<211> 341

<212> PRT

<213> *Pseudomonas syringae*

<400> 5

Met	Gln	Ser	Leu	Ser	Leu	Asn	Ser	Ser	Ser	Leu	Gln	Thr	Pro	Ala	Met
1				5					10					15	
Ala	Leu	Val	Leu	Val	Arg	Pro	Glu	Ala	Glu	Thr	Thr	Gly	Ser	Thr	Ser
			20					25					30		
Ser	Lys	Ala	Leu	Gln	Glu	Val	Val	Val	Lys	Leu	Ala	Glu	Glu	Leu	Met
	35						40					45			
Arg	Asn	Gly	Gln	Leu	Asp	Asp	Ser	Ser	Pro	Leu	Gly	Lys	Leu	Leu	Ala
	50					55					60				
Lys	Ser	Met	Ala	Ala	Asp	Gly	Lys	Ala	Gly	Gly	Gly	Ile	Glu	Asp	Val
65					70				75					80	
Ile	Ala	Ala	Leu	Asp	Lys	Leu	Ile	His	Glu	Lys	Leu	Gly	Asp	Asn	Phe
			85					90						95	
Gly	Ala	Ser	Ala	Asp	Ser	Ala	Ser	Gly	Thr	Gly	Gln	Gln	Asp	Leu	Met
			100					105					110		
Thr	Gln	Val	Leu	Asn	Gly	Leu	Ala	Lys	Ser	Met	Leu	Asp	Asp	Leu	Leu
			115				120					125			
Thr	Lys	Gln	Asp	Gly	Gly	Thr	Ser	Phe	Ser	Glu	Asp	Asp	Met	Pro	Met
	130					135					140				
Leu	Asn	Lys	Ile	Ala	Gln	Phe	Met	Asp	Asp	Asn	Pro	Ala	Gln	Phe	Pro
145					150					155				160	

Lys Pro Asp Ser Gly Ser Trp Val Asn Glu Leu Lys Glu Asp Asn Phe  
 165 170 175  
 Leu Asp Gly Asp Glu Thr Ala Ala Phe Arg Ser Ala Leu Asp Ile Ile  
 180 185 190  
 Gly Gln Gln Leu Gly Asn Gln Gln Ser Asp Ala Gly Ser Leu Ala Gly  
 195 200 205  
 Thr Gly Gly Gly Leu Gly Thr Pro Ser Ser Phe Ser Asn Asn Ser Ser  
 210 215 220  
 Val Met Gly Asp Pro Leu Ile Asp Ala Asn Thr Gly Pro Gly Asp Ser  
 225 230 235 240  
 Gly Asn Thr Arg Gly Glu Ala Gly Gln Leu Ile Gly Glu Leu Ile Asp  
 245 250 255  
 Arg Gly Leu Gln Ser Val Leu Ala Gly Gly Gly Leu Gly Thr Pro Val  
 260 265 270  
 Asn Thr Pro Gln Thr Gly Thr Ser Ala Asn Gly Gly Gln Ser Ala Gln  
 275 280 285  
 Asp Leu Asp Gln Leu Leu Gly Gly Leu Leu Leu Lys Gly Leu Glu Ala  
 290 295 300  
 Thr Leu Lys Asp Ala Gly Gln Thr Gly Thr Asp Val Gln Ser Ser Ala  
 305 310 315 320  
 Ala Gln Ile Ala Thr Leu Leu Val Ser Thr Leu Leu Gln Gly Thr Arg  
 325 330 335  
 Asn Gln Ala Ala Ala  
 340

<210> 6

<211> 1026

<212> DNA

<213> *Pseudomonas syringae*

<400> 6

atgcagagtc tcagtcttaa cagcagctcg ctgcaaacc cggcaatggc ccttgctctg 60  
 gtacgtcctg aagccgagac gactggcagt acgtcgagca aggcgcttca ggaagttgtc 120  
 gtgaagctgg ccgaggaact gatgcgcaat ggccaactcg acgacagctc gccattggga 180  
 aaactgttgg ccaagtcgat ggccgcagat ggcaaggcgg gcggcggtat tgaggatgtc 240

```

atcgctgcgc tggacaagct gatccatgaa aagctcggcg acaacttcgg cgcgtctgcg 300
gacagcgccct cgggtaccgg acagcaggac ctgatgactc aggtgctcaa tggcctggcc 360
aagtcgatgc tcgatgatct tctgaccaag caggatggcg ggacaagctt ctccgaagac 420
gatatgccga tgctgaacaa gatcgcgcag ttcattggatg acaatcccgc acagtttccc 480
aagccggact cgggctcctg ggtgaacgaa ctcaaggaag acaacttcct tgatggcgac 540
gaaacggctg cgttccgttc ggactcgcac atcattggcc agcaactggg taatcagcag 600
agtgcgctg gcagtctggc agggacgggt ggaggtctgg gcaactccgag cagtttttcc 660
aacaactcgt ccgtgatggg tgatccgctg atcgacgcca ataccgggtcc cggtgacagc 720
ggcaataccc gtggtgaagc ggggcaactg atcggcgagc ttatcgaccg tggcctgcaa 780
tcggtattgg ccggtggtgg actgggcaca cccgtaaaca ccccgagac cggtagctcg 840
gcgaatggcg gacagtccgc tcaggatctt gatcagttgc tgggctggctt gctgctcaag 900
ggcctggagg caacgctcaa ggatgccggg caaacaggca cgcagctgca gtcgagcgct 960
gcgcaaatacg ccaccttgct ggtcagtacg ctgctgcaag gcacccgcaa tcaggctgca 1020
gcctga                                     1026

```

<210> 7

<211> 344

<212> PRT

<213> *Pseudomonas solanacearum*

<400> 7

```

Met Ser Val Gly Asn Ile Gln Ser Pro Ser Asn Leu Pro Gly Leu Gln
  1               5               10              15

Asn Leu Asn Leu Asn Thr Asn Thr Asn Ser Gln Gln Ser Gly Gln Ser
      20               25              30

Val Gln Asp Leu Ile Lys Gln Val Glu Lys Asp Ile Leu Asn Ile Ile
      35               40              45

Ala Ala Leu Val Gln Lys Ala Ala Gln Ser Ala Gly Gly Asn Thr Gly
      50               55              60

Asn Thr Gly Asn Ala Pro Ala Lys Asp Gly Asn Ala Asn Ala Gly Ala
      65               70              75              80

Asn Asp Pro Ser Lys Asn Asp Pro Ser Lys Ser Gln Ala Pro Gln Ser
      85               90              95

Ala Asn Lys Thr Gly Asn Val Asp Asp Ala Asn Asn Gln Asp Pro Met
      100              105             110

Gln Ala Leu Met Gln Leu Leu Glu Asp Leu Val Lys Leu Leu Lys Ala
      115              120             125

Ala Leu His Met Gln Gln Pro Gly Gly Asn Asp Lys Gly Asn Gly Val
      130              135             140

```



Gly Gly Ala Asn Gly Ala Lys Gly Ala Gly Gly Gln Gly Gly Leu Ala  
145 150 155 160

Glu Ala Leu Gln Glu Ile Glu Gln Ile Leu Ala Gln Leu Gly Gly Gly  
165 170 175

Gly Ala Gly Ala Gly Gly Ala Gly Gly Gly Val Gly Gly Ala Gly Gly  
180 185 190

Ala Asp Gly Gly Ser Gly Ala Gly Gly Ala Gly Gly Ala Asn Gly Ala  
195 200 205

Asp Gly Gly Asn Gly Val Asn Gly Asn Gln Ala Asn Gly Pro Gln Asn  
210 215 220

Ala Gly Asp Val Asn Gly Ala Asn Gly Ala Asp Asp Gly Ser Glu Asp  
225 230 235 240

Gln Gly Gly Leu Thr Gly Val Leu Gln Lys Leu Met Lys Ile Leu Asn  
245 250 255

Ala Leu Val Gln Met Met Gln Gln Gly Gly Leu Gly Gly Gly Asn Gln  
260 265 270

Ala Gln Gly Gly Ser Lys Gly Ala Gly Asn Ala Ser Pro Ala Ser Gly  
275 280 285

Ala Asn Pro Gly Ala Asn Gln Pro Gly Ser Ala Asp Asp Gln Ser Ser  
290 295 300

Gly Gln Asn Asn Leu Gln Ser Gln Ile Met Asp Val Val Lys Glu Val  
305 310 315 320

Val Gln Ile Leu Gln Gln Met Leu Ala Ala Gln Asn Gly Gly Ser Gln  
325 330 335

Gln Ser Thr Ser Thr Gln Pro Met  
340

<210> 8

<211> 1035

<212> DNA

<213> Pseudomonas solanacearum

<400> 8

atgtcagtcg gaaacatcca gagcccgctcg aacctcccgg gtctgcagaa cctgaacctc 60

```

aacaccaaca ccaacagcca gcaatcgggc cagtccgtgc aagacctgat caagcaggtc 120
gagaaggaca tcctcaacat catcgagcc ctcgtgcaga aggccgcaca gtcggcgggc 180
ggcaacaccg gtaacaccgg caacgcgccg gcgaaggacg gcaatgccaa cgcgggcgcc 240
aacgacccga gcaagaacga cccgagcaag agccaggctc cgcagtcggc caacaagacc 300
ggcaacgtcg acgacgccaa caaccaggat ccgatgcaag cgctgatgca gctgctggaa 360
gacctggtga agctgctgaa ggcggccctg cacatgcagc agcccggcgg caatgacaag 420
ggcaacggcg tgggcgggtgc caacggcgcc aagggtgccg ggggccaggg cggcctggcc 480
gaagcgctgc aggagatcga gcagatcctc gccagctcg gggcgggcgg tgctggcgcc 540
ggcgggcgcg gtggcggtgt cggcggtgct ggtggcgcg atggcggtc cgggtcgggg 600
ggcgagggcg gtgcgaacgg cgccgagcgc ggcaatggcg tgaacggcaa ccaggcgaac 660
ggcccgcaga acgcaggcga tgtcaacggt gccaacggcg cggatgacgg cagcgaagac 720
cagggcgggc tcaccggcgt gctgcaaaaag ctgatgaaga tcctgaacgc gctggtgcag 780
atgatgcagc aaggcggcct cggcgggcgc aaccaggcgc agggcggtc gaagggtgcc 840
ggcaacgcct cgccggcctc cggcggaac ccggcgcgga accagcccgg ttcggcggat 900
gatcaatcgt ccggccagaa caatctgcaa tcccagatca tggatgtggt gaaggaggtc 960
gtccagatcc tgcagcagat gctggcggcg cagaacggcg gcagccagca gtccacctcg 1020
acgcagccga tgtaa 1035

```

<210> 9  
 <211> 696  
 <212> DNA  
 <213> *Solanum tuberosum*

```

<400> 9
gaattcagga agaattttgt aggttcaact aaattatata tatatatata aaaaaataaa 60
aattattaga cgcttcgact atttacttac tttaaaattt gaattttcgt acgaataaaa 120
ttatttgtca gagaaaagtc ttttagctat tcacatgcta ggaagtttca cttttggtgg 180
atcagtgatt gtatattatt taatatatat caattttctc atcaaaactga aaatgaaaga 240
taaaattaat attaaaaact ccattcattt taattttatt tcatgttttg acttgatcca 300
aaatctaaca atttaaaagg ttttaaaatt ttgtgctttt ttttaaatla aaaatatgtc 360
aaatatatta aaatatattt tttaaaattt atactaaaaa acatgtcaca tgaatatattg 420
aaattataaa attatcaaaa ataaaaaaag aatatttctt taacaaatta aaattgaaaa 480
tatgataaat aaattaaact attctatcat tgatttttct agccaccaga tttgaccaa 540
cagtgggtga catgagcaca taagtcattt ttattgtatt ttattactca ctccaaaaat 600
ataggggaata tgtttactac ttaatttagt caaatataat tttatattag aataattgaa 660
tagtcaaaca agaaacttta atgcatcctt attttt 696

```

<210> 10  
 <211> 110  
 <212> DNA  
 <213> *Nicotiana tabacum*

```

<400> 10
tctagaccat gggatttttt ctcttttcac aaatgccctc attttttctt gtgtcgacac 60
ttctcttatt cctaataata tctcactctt ctcatgccca aaactctaga 110

```

<210> 11  
 <211> 34  
 <212> PRT  
 <213> Nicotiana tabacum

<400> 11  
 Met Gly Phe Phe Leu Phe Ser Gln Met Pro Ser Phe Phe Leu Val Ser  
           1                  5                  10                  15  
 Thr Leu Leu Leu Phe Leu Ile Ile Ser His Ser Ser His Ala Gln Asn  
                   20                  25                  30

Ser Arg

<210> 12  
 <211> 102  
 <212> DNA  
 <213> Nicotiana tabacum

<400> 12  
 atgggatttt ttctcttttc acaaatgccc tcattttttc ttgtctctac acttctctta 60  
 ttctaataa tatctcactc ttctcatgcc caaaactctc aa 102

<210> 13  
 <211> 34  
 <212> PRT  
 <213> Nicotiana tabacum

<400> 13  
 Met Gly Phe Phe Leu Phe Ser Gln Met Pro Ser Phe Phe Leu Val Ser  
           1                  5                  10                  15  
 Thr Leu Leu Leu Phe Leu Ile Ile Ser His Ser Ser His Ala Gln Asn  
                   20                  25                  30

Ser Gln

<210> 14  
 <211> 90  
 <212> DNA  
 <213> Nicotiana tabacum

<400> 14

atgggatttg ttctcttttc acaattgcct tcattttcttc ttgtctctac acttctctta 60  
ttcctagtaa tatccactc ttgccgtgcc 90

<210> 15

<211> 30

<212> PRT

<213> Nicotiana tabacum

<400> 15

Met Gly Phe Val Leu Phe Ser Gln Leu Pro Ser Phe Leu Leu Val Ser  
1 5 10 15

Thr Leu Leu Leu Phe Leu Val Ile Ser His Ser Cys Arg Ala  
20 25 30

<210> 16

<211> 75

<212> DNA

<213> Nicotiana tabacum

<400> 16

atggagagag ttaataatta taagttgtgc gtggcattgt tgatcatcag catggtgatg 60  
gcaatggcgg cggca 75

<210> 17

<211> 25

<212> PRT

<213> Nicotiana tabacum

<400> 17

Met Glu Arg Val Asn Asn Tyr Lys Leu Cys Val Ala Leu Leu Ile Ile  
1 5 10 15

Ser Met Val Met Ala Met Ala Ala Ala  
20 25

<210> 18

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 18  
tgacggatcc taggaagttt cacttttggt gg 32

<210> 19  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer

<400> 19  
tagcgaattc tatgtgtggt tggctccct tg 32

<210> 20  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer

<400> 20  
tacgtctaga tatgtgtggt tggctccct tg 32

<210> 21  
<211> 34  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer

<400> 21  
atactctaga accatgggtc tgaatacaag tggg 34

<210> 22  
<211> 35  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer



<400> 26

aggtctagag ttttgggcat gagaagagtg

30

0970693 012601  
T09210 "06907260